An Exploratory Study of Lecturers' Views of Out-of-Class Academic Collaboration Among Students

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Abstract

academic collaboration (OCAC) among students at a large Singapore university. Two types of OCAC were investigated: collaboration initiated by students, e.g., groups decide on their own to meet to prepare for exams, and collaboration required by teachers, e.g., teachers assign students to do projects in groups. Data were collected via one-on-one interviews with 18 faculty members from four faculties at the university. Findings suggest that OCAC, especially of a teacher-required kind, is fairly common at the university. Faculty members' views on factors affecting the success of OCAC are discussed for the light they might shed on practices to enhance the effectiveness of OCAC.

Keywords: *assessment, collaboration, cooperative learning, group dynamics, out-of-class study, project work.*

The relative success of humans as a species rests in part on our ability to collaborate with one another. Collaboration offers benefits in many areas of life: from sports to the workplace to the family (Johnson & Johnson, 1994; Kohn, 1992). Collaboration with peers represents an important venue for working together. Hartup (1992) and Harris (1998) maintain that peer relations are pivotal in the social and intellectual development of children, as well as to success in adulthood. In education, a large quantity of research exists suggesting that student-student collaboration in the classroom produces superior results on a host of variables, including achievement, thinking skills, interethnic relations, liking for school, and self-esteem (for reviews, see Bossert, 1988-1989; Cohen, 1994; Johnson & Johnson, 1989; Johnson, Johnson, & Stanne, 2000; Sharan, 1980; Slavin, 1995).

The focus of the exploratory study reported in the present was on how students – of language and of any subject - study together outside the classroom. Such collaboration could be labelled out-of-class academic collaboration (OCAC). Types of OCAC that take place among students are:

1. Institutionally-sponsored OCAC. One example is peer tutoring programmes in which students proficient in a subject area are chosen by the institution (and sometimes paid or otherwise rewarded) to tutor students weak in that subject. Such programmes are often sponsored by the institution at which students are studying, but other organizations, such as religious or ethnic organizations, also establish OCAC programmes.

2. Teacher-initiated OCAC. For instance, a lecturer may assign students to work together outside of class time on group projects.
3. Student-initiated OCAC. A group of students get together on their own to study.

These three types of OCAC may overlap. For instance, after working on a teacher-initiated OCAC project, a group of students may move on to do student-initiated OCAC. Of course, students can engage in OCAC for non-academic purposes, e.g., sports, gangs, clubs, romance, and substance abuse. This study focuses on mostly on the second type of OCAC.

Bloom (1984) and Walberg (1984) state that peer interaction outside the classroom plays a key role in academic success. OCAC has been recommended for its value in many different educational contexts, e.g., disabled tertiary students (Finn, 1997), non-disabled primary and secondary school students who form peer support groups with disabled students (Cushing & Kennedy, 1997), trainee teachers (Hawkey, 1995), and entering tertiary level students (Ignash, 1993).

Reasons for Encouraging OCAC

The concept of collaboration among learners has many roots. For instance, cognitive psychologists emphasize the role of learners rather than teachers and materials in successful learning. This emphasis on learners has inspired a large number of related changes of focus in education, such as a stress on process over product (Bereiter & Scardamalia, 1987) and on students as active, collaborative constructors of their own knowledge not empty vessels to be lined up single file in rows and filled with knowledge by teachers or teaching materials (Brown, Collins, & Duguid, 1989; Bruner, 1966).

Palmer (1998, p. 6) states it thusly in reference to university education:

> I have no question that students who learn, not professors who perform, is what teaching is all about. ... Teachers possess the power to create conditions that can help students learn a great deal--or keep them from learning much at all. Teaching is the intentional act of creating those conditions.

Still another rationale for promoting student-student collaboration, including OCAC, lies in the belief that education should be a training ground and a practice field for democracy. As Kohn (1993, p. 9) states, "Students should not only be trained to live in a democracy when they grow up; they should have the chance to live in one today." In this way, via their academic education students can learn and come to value the skills and attitudes they need to be active citizens who exercise both their rights and responsibilities in a society where cooperation is prized over competition.

Most tertiary level students usually spend less than 20 hours a week in lecture halls and classrooms. Thus, if these class sessions remain the only time in which students collaborate with each other, the scope of such collaboration will be greatly constrained. OCAC provides a much wider range of times and, indeed, places in which students can collaborate. Treisman (1983) observed that successful students at a U.S. university were more likely than less successful students to have established student-initiated OCAC groups. Sokolove (1998) reported that students at a U.S. university who studied together for a science exam outperformed those who studied alone. George (1999) observed that her graduate students at a university in Thailand took their own initiative to form what she called “homework cartels”.

OCAC can be especially useful for second language learners in a foreign language context. Outside of class, foreign language students often have few sources of input in the target language and few opportunities to produce output. The temptation to use their first language everywhere they go often means that such students only use the second language when in class. OCAC offers possibilities for these pupils to receive more input and produce more output as they collaborate with classmates.

Finally, Astin (1993) studied 159 tertiary institutions, 22 outcome variables, and 88 environmental variables affecting academic achievement, personal development, and satisfaction with education. The two environmental variables found to have the greatest influence were student-student interaction and student-faculty interaction. Astin concludes that, "Where students work together in small groups, students basically teach each other, and our pedagogical resources are multiplied."

Research Questions

Investigation of OCAC has two potential benefits. One, by understanding how students study together in more natural settings, away from the classroom and their teachers' immediate supervision, educators may be able to gain insights into how to facilitate in-class collaboration. Two, by better understanding OCAC, educators can better facilitate and encourage it.

The previously-mentioned reports notwithstanding, there appears to have been little research on OCAC at the university or any level, and no such research in Singapore. The current study was undertaken as a preliminary investigation into the following questions:

1. Do lecturers encourage student-initiated OCAC?
2. Do faculty members assign teacher-required OCAC?
3. In the case of teacher-required OCAC, who makes decisions about the composition and size of OCAC groups?
4. When faculty make these decisions, what choices do they make?
5. How is teacher-required OCAC graded?
6. What do faculty members perceive as the advantages and disadvantages of OCAC?
7. What do faculty members perceive as key elements of successful OCAC?

While, as stated earlier in this article, students are the key actors in the educational drama, teachers play essential supporting roles. As Williamson (1995) notes, attempts in education to promote more learner-centred methods face many difficulties, including teachers' reluctance to give up transmission styles of instruction for fear of losing control. Williamson contends that many teachers lack experience with independent forms of learning. Thus, professional development and planning time are necessary. The researchers in the present study hoped to aggregate information that could assist this development and planning.

The next section of this report describes the study's participants, instrumentation, and data collection procedures.

Methodology

Faculty members at the National University of Singapore (NUS) constituted the participants in this study. The university is composed of ten faculties (e.g., Faculty of

Law) and has approximately 19,000 undergraduate and 7,900 graduate students. Most of the members of the research team are Language and Communication instructors in four of these faculties: computing, arts and sciences, engineering, and business. Faculty members from these schools were interviewed, as the researchers' greater familiarity with the faculties would aid in comprehension and interpretation of the interview data.

For the interviews, five faculty members from each of the four faculties who taught students in years 1, 2, and 3 were selected via a stratified random sample so as to provide a distribution from a range of departments within each faculty. These 20 faculty members were then approached for interviews. Due to time constraints, only three faculty members from Arts and Sciences could be interviewed. Of the 18 interviewees, six were female and twelve were male; twelve were ethnic Chinese from Singapore or Malaysia, four were South Asian nationals, and two were Caucasians from Europe or North America. An interview schedule for use with lecturers was developed based on the research questions and pilot tested (please see Appendix). The actual interviews were done one-on-one, usually in the faculty member's office and lasted approximately 20-30 minutes.

Results

Faculty Encouragement of Student-Initiated OCAC

When asked if they encouraged student-initiated OCAC, a majority of 11 faculty members stated that they did, six neither encouraged nor discouraged, and only one discouraged. Reasons for encouragement included helping weaker students, developing teamwork skills and attitudes, coping with difficult questions and large amounts of material to cover, increasing the amount of fun and motivation, exchanging views, and seeing their progress in comparison with others. One concern mentioned by a few of the faculty members was that students might copy from groupmates rather than working together.

Size of OCAC Groups

Lecturers reported that for teacher-required groups, the typical group size was 4-5, although this depended on the nature of the task students were given and the time available to perform it. One lecturer in Computing used groups of only two to make it easier for group members to find a time to meet, as larger groups faced greater scheduling difficulties. Most lecturers felt that groups larger than 5 might be more prone to the problem of freeloading. If a large group was required to achieve a task, subgroups could be used.

Group Composition for OCAC

For teacher-required OCAC, two-thirds of the faculty members let students choose their own groupmates. Their reasons for doing this included:

1. large classes made the logistics of assigning students to groups very difficult;
2. students could find classmates with matching schedules more easily than faculty members could;
3. if students already knew their groupmates, the work could proceed more quickly since understanding already existed;

4. faculty members did not wish to impose, preferring to provide free choice to students; and,
5. students often already had in mind who they wanted to work with, sometimes remaining in the same group for many courses.

However, this last point could have a negative aspect, as one faculty member reported knowing students who had been pressured to change their major in order to stay with the same group.

Reasons given by those faculty members who assigned students to groups included:

1. otherwise weaker students, students who were loners, and students who did not know their classmates often got left out; and,
2. a mix of students was more likely.

Mixing students by ethnicity was difficult, as Chinese form a large majority among NUS students. Mixing females and males was difficult in the Engineering faculty because of the predominance of males there. One faculty member reported trying to spread students of the less-represented sex among the groups.

Assessment in Teacher-Required OCAC

One lecturer noted that grades were a strong motivator for NUS students, and, thus, could be used to facilitate group effectiveness. As to the controversial issue of the grading of group work, the most commonly reported practice among the faculty members interviewed was to give everyone the same grade, although a few of the interviewees stated that in the unusual case of a particularly idle group member, some adjustments might be made. For instance, one lecturer stated that when he received a complaint about an idle group member, he would administer a peer review among the members of that group. Depending on the results of this review, the group member's grade might be lowered.

Among the faculty members, the next most popular grading option after all group members getting the same grade was a combination of group and individual grade. This was done in various ways:

1. Each student did one part of their group's project. The project received an overall grade, which was combined with the individual grade that each student received on their part of the project.
2. Projects included both a written report and an oral presentation. A group grade was given to the written form of the project, with individual grades for each person's part in the oral presentation of the project.
3. During the group's presentation, each group member was asked a question to test their understanding. The quality of their answer formed the individual component of their overall project grade.

Pluses and Minuses of OCAC

The faculty members noted a number of plusses and minuses for OCAC. The plusses included:

1. helping students see gaps in their knowledge;
2. providing more opinions and solutions;
3. encouraging discussion through which students learn to talk about course content, and become more articulate;

4. increasing efficiency by dividing the work;
5. helping students learn how to work together;
6. promoting peer tutoring;
7. stimulating better work by students; and,
8. increasing learning and retention.

The minuses of OCAC in lecturers' minds included:
1. misunderstanding among students of what group work involves, resulting in, for example, some students just copying from groupmates;
2. preventing students from learning to stand on their own, as some tended to depend on others;
3. leading to inefficiency, as sometimes groups did not make good use of time; and,
4. spending too much time working on a task, as being in a group led some students to get carried away with the work.

Factors Needed for Successful OCAC

The faculty members suggested a number of factors that they believed were necessary if OCAC, whether student-initiated or teacher-required, was to succeed. These included:
1. reasonably active members who prepare prior to meetings not just with answers and work done, but also with questions;
2. compatible personalities or at least the ability to get along well;
3. one or two members who spur on the others;
4. delegation of duties;
5. a feeling of familiarity with and trust in each and in the group process;
6. willingness to come to the faculty member if their group is not working well
7. a sharing of materials;
8. the necessary competencies to do the tasks;
9. skill in how to work together effectively, including knowing how to organize their time together and how to solve problems;
10. a dedication to helping *all* group members understand.

A non-Chinese faculty member who had been teaching at NUS for more than 20 years was optimistic about the effect of culture on the propensity toward working in groups of the predominantly Chinese undergraduates at NUS. Although he had seen that students were sometimes selfish, e.g., hiding required readings in the library, once they were in a group, their culture spurred them to try hard to acquit themselves well. He cited two cultural factors:
1. *Guanxi* means to build relationships. If students do not perform well in their group, word will quickly get around, no one will want to work with them, and they will not build relationships for the future. Such relationships are seen as pivotal to future career and social success.
2. *Ren Qing* means to return favours. By contributing to their groups, students build the pool of favours from which they can later collect from their groupmates. Also, in order to be seen as reliable, students need to return the favours that groupmates do for them.

Discussion

In this section, implications of some of the findings of the present study are discussed, along with limitations of the study and suggestions for future research.

Implications. Based on the results of the current research and a companion study involving questionnaire data from approximately 400 NUS students (Crookall, et al., 2000), it appears that student-initiated and especially teacher-required OCAC are common among NUS students. The researchers are also aware of a small amount of institutionally-sponsored OCAC at NUS, e.g., a religious group that matches foreign students from China with local NUS students who tutor them in English.

OCAC seems likely to become more common given the general trend in education toward valuing student-student collaboration. In terms of educational theory, social constructivism (Vygotsky, 1978) has become increasingly prominent. In terms of educational practice, project work (Ribe & Vidal, 1993), problem-based learning (Boud & Feletti, 1996), cooperative/collaborative learning (Baloche, 1998), and other forms of experiential learning enjoy greater use. For instance, in Singapore, project work is being introduced at primary and secondary levels, and will soon be included in university admissions criteria.

Thus, the question before educators lies in how best to prepare themselves and their students to work together out of the classroom. By reviewing some of the points suggested by the lecturers as necessary for successful OCAC, ideas may arise for attempting to achieve that success. As part of the answer to enhancing student out-of-class collaboration clearly resides in what occurs in-class, the discussion will focus there.

Task competencies. One point raised by faculty members concerned whether students possessed the competencies needed to complete the tasks that they were to undertake. Classrooms provide a prime location for the development of these skills before and during the time students need them for their out-of-class work. Also, in designing tasks for OCAC, faculty members need to take care that they challenge students without overwhelming them.

One means of making challenging tasks doable for students lies in providing clear assessment criteria (Johnson & Johnson, 1996), e.g., in the form of rubrics, that can be developed with students and modelled with in-class work. Such criteria help students grasp the competencies expected of them and enable them to move more efficiently toward developing those competencies. In recognition of the fact that teaching via group activities involves what for many faculty members are new skills, such as setting and assessing group tasks, NUS has been sponsoring workshops on group dynamics and group projects.

Familiarity and trust. Another factor in successful OCAC, according to some of the lecturers interviewed, involves group members knowing and trusting each other. Many books on cooperative learning, e.g., Baloche (1998), offer suggestions for in-class activities that help groups bond into effective teams. Thus, at least some of the time, the same group that works together in-class can also work together out-of-class.

However, some of the faculty members interviewed in this study reported knowing students who always worked with the same groupmates over a number of courses and years. The literature on cooperative learning, e.g., Kagan (1994), suggests that students work with a variety of groupmates in short- and long-term activities, so that they develop competencies and characteristics that will enable them to work with anyone,

even those with whom they are initially unfamiliar or who may be different from themselves in a variety of ways.

All participate; all learn. Among the fears voiced by the lecturers regarding OCAC was that some students would be dependent on others and might just put their name on the work that others did, with the doers learning and the bystanders just taking up space. As noted in the faculty members' lists of factors for OCAC success, everyone in a group needs to be active, and the group needs to make as their goal the learning of all their members. Delegation of duties, another of the success factors nominated by faculty members, offers one means of encouraging participation by all. The practice of dual grading, used by some of the faculty members, provides an addition means of encouraging everyone to be active. Kagan (1995) takes this a step further, arguing strongly that any form of group grading, even partial, blurs assessment of each individuals' learning and effort.

Encouraging those group members who for whatever reason might not be very active represents only part of the solution. The other part lies in what some of the faculty members discussed as to the other members spurring on their groupmates and in the feeling of trust among groupmates. The cooperative learning literature talks about positive interdependence (Johnson & Johnson, 1994), the feeling among people that they sink or swim together. Reluctance to help weaker students unless they were good friends was a problem mentioned by the lecturers. Hopefully, if this feeling of positive interdependence can be fostered within the groups, or even better throughout the entire class or faculty, students will be there to give a friendly push or helpful suggestion to their peers.

Limitations and Suggestions for Future Research. The generalizability of this study is limited to the four faculties and to the 1998-1999 academic year in which the data collection was done. Also, only one means of data collection, interviews with faculty members, was used.

The following are among the ideas that future researchers of OCAC may wish to pursue:

1. Collecting and recording the task descriptions, instructions, and other input given by teachers when assigning teacher-required OCAC;
2. Comparing the achievement of students who did and did not engage in student-initiated OCAC;
3. Examining the role of culture (Ho & Crookall, 1995);
4. Observing students as they worked in OCAC groups, and comparing the interaction in student-initiated and teacher-required OCAC;
5. Investigating the role of training, e.g., in group dynamics, on the interaction in OCAC groups;
6. Assessing the relation between the quality of groups' interaction and the quality of their output;
7. Exploring the use of peer assessment (Topping, 1998);
8. Examining the use and effects of institutionally-sponsored OCAC.

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Appendix: Interview Schedule for Lecturers

Student-Initiated and Teacher-Required Out-of-Class Academic Collaboration among Students at National University of Singapore
(Interview Schedule for Lecturers)

This interview has three main sections:

1) *The first concerns students' outside-of-class collaboration when not assigned by you, i.e., student-initiated collaboration.*
2) *The second section asks about when about when you assign students to collaborate outside of class, i.e., teacher-initiated collaboration.*
3) *The third section asks general questions about out-of-class collaboration by students.*

We would appreciate your honest and complete responses to the questions. Thank you.

Faculty:

Total number of years of teaching experience at tertiary level:

Name of course(s) teaching this semester:

Section 1: Student-initiated Collaboration

1. Do you explicitly encourage your students to collaborate outside of class, other than when you specifically assign them to do so? If so, why? How?
2. Do you explicitly discourage your students from collaborating outside of class, other than when you specifically assign them to? If so, why? How?

Section 2: Teacher-initiated Collaboration

3. How often do you assign your students to work together outside of class for academic purposes?
   ( ) Never
   ( ) Seldom (This means_____)
   ( ) Occasionally (This means_____)
   ( ) Often (This means_____)
   ( ) Daily
4. If you do assign your students to work together outside of class, briefly describe the kinds of tasks you give them.
5. If you do assign your students to work together outside of class, do you assign them to specific groups, or do you let them choose their own groups? Why or why not?
   - Teacher assigns group
   - Teacher allows students to choose their own groups

6. If you do assign your students to work together outside of class, do you assign them a topic for the project, or do you allow your students to choose their own topics? Why?
7. If you do assign your students to groups for out-of-class work, do you take into consideration the following characteristics when grouping students, and briefly explain how and why you do this.
   - Level of enthusiasm for the assignment (same or mixed?)
   - With whom? (personalities and work styles?)
   - Ethnic group (mixed or single ethnic groups)
   - Group size
   - Mixed or single gender
   - Level of competency (mixed or same)
   - Others
8. How do you grade group assignments? (Example: all members get the same grade; grades are individualized; no grade is given, etc…)

Section 3: General Questions

9. In your opinion, what factors make for successful out-of-class collaboration by students?
10. In general, what do you see as the plusses and minuses of student out-of-class collaboration?